TABLE 1.—*Continued.*

Stations.	Observers.	General state of the sky, a. m.				Sky near the sun, a. m.			
		8:00	8:30	9:00	Sum.	8:00	8:30	9:00	Sum.
Mississippi—Con'd.									
Pearlington	Annette Koch	39	39	37	115	30	28	28	86
Means					91				76
Per cent of total possible cloudiness					23.0				26.4
Louisiana.									
Poydras	P. V. Relimpio	42	45	46	133	16	16	22	54
New Orleans	H. F. Alciatore	59	61	67	187	27	29	33	89
Southern Uni'y Farm	Hugh Jamieson	41	45	41	127	27	29	24	80
Houma	Mrs. K. M. Haggerty	39[3]	49[3]	53[3]	141	29	28	29[3]	86
Napoleonville	Edward Godchaud	57	48	39[3]	144	38	28	23	89
Paincourtville	Jos. E. LeBlanc	25	38	46	109	21	33	38	92
Franklin	J. M. Bonney	51	54	58	163	40	52	37	129
Means					143				89
Per cent of total possible cloudiness					36.4				30.9

[1] Three days missing. [2] Four days missing. [3] One day missing.

In Table 1 are given the States, the stations, the observers, the sums of the daily numbers at each station, deduced from the observations at 8:00, 8:30, and at 9:00 each morning, both for the entire sky and for the sky near the sun respectively; also the sum for the three sets in each group, the mean for each state, and finally the percentage. Collecting these last together in Table 2 the result is presented compactly. It may be compared with the corresponding result for 1897, which is copied from the first report, and placed in the lower section of the table.

TABLE 2.—*Percentage of cloudiness, by States.*

YEAR OF OBSERVATION, 1898.

Name of State.	General sky.	Near the sun.	Name of State.	General sky.	Near the sky.
Virginia	44.9	41.7	Alabama	17.1	15.7
North Carolina	28.2	25.7	Mississippi	23.0	26.4
South Carolina	17.5	16.0	Louisiana	36.4	30.9
Georgia	12.2	10.8			

YEAR OF OBSERVATION, 1897.

Virginia	49.2	42.7	Alabama	15.2	14.9
North Carolina	35.8	33.3	Mississippi		
South Carolina	33.7	32.1	Louisiana	26.5	21.5
Georgia	18.4	16.0			

Chart IX, at the end of the WEATHER REVIEW for this month is constructed in the same manner as that for last year, and gives under the name of each station the two observation sums, (1) for the general sky, and (2) for the sky near the sun. This will enable the reader to consider the local conditions more closely. The original observation sheets contain notes describing the weather of each day at the several stations. An inspection of Table 2 indicates that the observations of 1898 give *precisely the same* result as those of 1897, which is as follows: *The weather conditions in the interior of Georgia and Alabama were better than in Virginia, North Carolina, South Carolina, Mississippi, and Louisiana; and judging from this table it would be much safer for the eclipse expeditions to locate their stations in the northern portions of Georgia and Alabama, upon the southern end of the Appalachian Mountains, where the track crosses the elevated areas, than nearer the coast line in either direction northeastward toward the Atlantic coast, or southwestward toward the Gulf coast; on the coast itself the weather is more unfavorable than in any other portion of the track.*

In 1898 the weather was decidedly better along the Georgia portion of the track, somewhat better near the Atlantic coast, but worse nearer the Gulf coast than in 1897. In both years the percentage of cloudiness was three times greater near the coast than in the Georgia and Alabama portions of the track.

These observations will be continued in the year 1897.

ELECTRIC SIGNAL APPARATUS AT ATLANTIC CITY, N. J.

By AL. BRAND, Observer Weather Bureau (dated October 13, 1898).[1]

I have the honor to inclose herewith a drawing and description of the electrical signal apparatus recently installed at the Weather Bureau station in Atlantic City. The support, as built, was devised by myself, with the help of several valuable suggestions offered by Mr. Hudson S. Vaughan, architect, and by making use of the lowering feature of the old Maring anemometer support.

Having been informed that the usual method at stations using electric lights for signals is to have the regulation lanterns attached to the flag pole, therefore I am inclined to believe that my support has nothing in common with those in use at other stations.

The suggestion of the Central Office in regard to pilot lamps was adopted, and I have had these lamps placed directly on the switch board, which is in a convenient position above the observer's desk.

DESCRIPTION OF WORK AND MATERIALS.

Support.

The fixed or lower portion of the support (see Chart VIII, Fig. 1) is built up of well-seasoned yellow pine in the shape of a sheath, or channel, the dimensions of which are as follows: The two side pieces are 14 feet and 9 inches long and 3 inches by 5 inches at the top, gradually diminishing to 3 inches by 6 inches at the base. The centerpiece, which extends from within about 1 foot of the top to the base, is $2\frac{1}{2}$ inches thick and of a sufficient depth to fill out the remaining space on one side of the pipe when the latter is in a perpendicular position. From about 6 inches below the pipe to the bottom of the support the centerpiece is built out flush with the sides. The three pieces of the support are securely bolted together with $\frac{1}{2}$-inch iron bolts. The support rests on a piece of timber 3 inches thick by 10 inches wide and 2 feet long, and is bolted to the chimney with three $\frac{5}{8}$-inch iron bolts. The metal portion of the support is built up of two lengths of galvanized-steel pipe, the upper portion of which is 18 feet long and $1\frac{1}{2}$ inch in diameter on the outside, the lower portion being 20 feet long and $2\frac{1}{2}$ inches in diameter on the outside. The smaller pipe is made to pass into the larger for a distance of about 3 feet, and made thoroughly rigid at that point with molten metal. Steel elbow and "T" fittings, short pieces of pipe and hooks, are used in making the short horizontal arms on which the lamps are hung, and which are fastened to the tops of both the larger and smaller pipe, as shown in drawing. The centers of the hooks, on which the lamps swing, are at a distance of just one-half of the diameter of the bottom of a lamp from the side of the upright pipe. This insures the lamps swinging plumb, and at the same time snugly against the pipe, thus relieving the latter from all unnecessary strain. The steel pipe swings at a point within 6 inches of the top of the wooden support, on a $\frac{1}{2}$-inch hardened steel pin, which passes through the larger portion of the pipe at a point 9 feet below the bottom horizontal arm, washing in two $\frac{3}{8}$-inch iron plates 6 by 6 inches square. Pin has head and nut washers.

The pipe being swung into a perpendicular position (which causes all of that portion of the pipe below the pivot pin to enter into the channel) it is securely locked in place by a $\frac{5}{16}$-inch steel pin near the base.

A block of $2\frac{1}{2}$ inches wide and about 6 inches long, and of a sufficient depth so as to fill out the remaining space on the

[1] Having seen a newspaper paragraph commendatory of the special devices in use at Atlantic City by the Weather Bureau observer, in connection with his electric signals, the Editor has requested Mr. Brand to publish some account of these in the MONTHLY WEATHER REVIEW, so that others may profit by his experience.—ED.

front of pipe, is bolted between the side pieces just above the pivot pin.

Wiring.

All of the wire used on the support or in the lamps, is what is known as canvasite cord made up of two strands of flexible wire. A separate circuit is run from each lamp to the switchboard in the office. The wire being connected with a porcelain weather proof socket (care being taken to have the said socket fastened to the inside of lantern in such a manner as to insure that the bulb of the incandescent lamp hangs squarely in the center of the lantern lenses) passes out through the ventilation opening at the top of the lantern, and enters the pipe at the "T" fitting in each of the short horizontal arms, thence passing down on the inside of the pipe to a point about 3 or 4 inches above the top of the wooden portion of the support, where a hole has been drilled to allow of its passing out and down the side of the wooden support, on porcelain knobs, to the side of chimney, which it enters.

Lamps.

The lamps were wired with one 32-candle power incandescent electric lamp in each, and in such a manner that the oil lamps can be substituted at any time without delay. The manner in which the incandescent lamp sockets were fastened to the inside of the lanterns will be best understood by an examination of a sketch showing a cross section of lantern globe and lamp socket (see Chart VIII, at side). It will be noticed that all that is necessary to firmly fix a socket in a lamp, when so wired, is to draw up the socket until the wire prongs, when spread out, will touch the sides of the lantern above the glass globe. By simply bending, in or out, the various prongs, the socket can be brought squarely in the center of lantern. All surplus wire should be drawn from the top of lantern.

The bottoms of the lanterns are fastened to the steel upright by a brass 1-inch band passing around each lantern and bolted on either side of pipe as shown in drawing.

Switchboard.

The switchboard is made of enameled black slate, 15 by 18 inches, provided with two 32-candle power incandescent electric pilot lamps, having opalescent shades, and two baby knife switches. The mains and knife switches are fused on front of board. All connections are made in rear of board, which is set into a neat varnished oak frame.

Painting.

Both the wood and metal portion of the support were given two good coats of paint, the first coat on the metal being mineral paint.

General Remarks.

While there is no doubt about a support erected in this manner being able to withstand any strain due to ordinary high winds, 30 to 40 miles, it should be observed closely during winds of a higher velocity, and if found necessary, three or four wire guys run up to within about 5 feet of the top lantern, after which it is thought that its strength will be equal to that of the combined wind vane and anemometer support. In order to make these guys easily detachable, they can be fitted with strong durable spring snaps to snap into the anchor irons.[1]

The only sway, which was very slight, noticed during the highest winds, since the erection of the new support, was confined entirely to the upper section. It was not a back and forward movement, but more in the nature of a slight lean with the wind, due to the elasticity of the steel pipe.

While a support erected along these lines insures an unobstructed display in every direction, it also permits of lowering the lanterns at a moment's notice, should occasion require, while the lanterns wired in this manner, are not mutilated in the least.

Should neither a suitable wall or chimney be available for the erection of a support of this kind, it might easily be stayed by iron braces.

[1] The greatest strain on the mast during high winds comes at the point through which the pivot bolt passes, and a hole through the iron pipe at this point weakens it appreciably. The construction at this point should be modified so that the full strength of the pipe may be retained. This size of mast would not be strong enough for lanterns heavier than the regulation masthead lantern now in use.—H. E. W. and C. F. M.

OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, a copy of the daily record at Honolulu is communicated to the Weather Bureau in advance of its official publication, and is herewith printed, as a special contribution, for the convenience of those who are studying the relations of the storms and weather of the United States to those of adjacent countries, with a view to long-range, seasonal predictions.

Meteorological observations at Honolulu.

AUGUST, 1898.

August, 1898.	Pressure at sea level.			Temperature.					Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	7 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	7 a. m.	2 p. m.	9 p. m.	Direction.	Force.		
1.	30.07	30.03	30.09	76	81	77	82	75	67	61	67	ne.	4	3-9	0.02
2.	30.05	30.01	30.05	75	81	76	82	74	71	58	71	nne.	3	2-8	0.00
3.	30.03	29.99	30.02	74	78	76	83	73	74	75	78	ne.	3-0	4-7	0.01
4.	30.00	29.95	30.01	74	83	76	84	72	80	58	74	ne-nne.	2-4	4-2	0.06
5.	29.99	29.93	29.99	75	82	77	83	72	74	64	75	ne.	3	7	0.00
6.	30.02	30.00	30.07	74	83	77	84	72	87	60	75	ne.	3	5	0.06
7.	30.08	30.04	30.08	77	81	78	83	75	75	69	69	ne.	3	9-6	0.03
8.	30.07	30.01	30.08	75	83	78	85	74	70	58	67	ne.	3	3	0.00
9.	30.07	30.01	30.06	77	83	78	84	76	67	52	67	ne.	2	4-1	0.00
10.	30.08	30.03	30.09	76	82	75	83	72	67	58	68	ne-n.	2-0	9-5	0.00
11.	30.06	30.01	30.07	74	80	77	83	72	74	61	68	nne.	3-4	6-2-6	0.07
12.	30.09	30.02	30.09	73	79	77	80	70	86	62	68	ne.	3	10-8	0.28
13.	30.08	30.03	30.08	75	81	75	83	74	70	54	78	ne.	4	5	0.02
14.	30.08	30.04	30.09	73	82	77	82	70	78	58	69	ne.	3	4	0.15
15.	30.09	30.02	30.11	74	80	76	83	71	78	64	78	ne.	3-4	4	0.01
16.	30.09	30.05	30.10	74	82	78	83	72	82	65	70	ne.	3	6	0.10
17.	30.10	30.01	30.07	75	84	76	84	73	78	53	66	ne.	2	8-1	0.01
18.	30.03	29.96	30.01	72	82	75	83	69	82	53	66	ne.	3	1	0.00
19.	30.02	29.95	30.03	66	83	74	84	65	85	49	70	nne.	3	1-0	0.00
20.	30.03	29.99	30.07	67	83	75	84	65	90	52	74	se-ne.	2	1	0.00
21.	30.07	29.99	30.05	68	83	76	86	66	90	59	74	e-n.	2	3-7-1	0.00
22.	30.03	29.98	30.04	76	83	76	85	75	66	59	78	ne.	3-0	3	0.04
23.	29.99	29.95	30.03	76	83	76	83	72	66	59	68	ne.	3	4	0.02
24.	30.04	30.01	30.10	75	82	73	84	74	70	58	84	ne.	4	4	0.01
25.	30.11	30.09	30.14	74	81	77	84	71	74	61	72	ene.	4	6	0.16
26.	30.12	30.06	30.13	75	82	74	83	72	74	55	72	nne.	5-3	4-2	0.12
27.	30.10	30.03	30.09	73	81	77	82	71	78	54	67	nne-e.	3	2-8	0.04
28.	30.07	30.01	30.07	75	80	75	81	70	70	61	68	ne.	0-3	10-3	0.08
29.	30.06	30.01	30.11	74	81	77	84	72	74	63	65	ene-ne.	3	3-8	0.62
30.	30.11	30.05	30.12	75	81	77	88	73	70	61	67	ne.	4	6	0.18
31.	30.07	29.98	30.03	74	79	76	82	73	74	63	69	ne.	3	6	0.04
	30.06	30.01	30.07	73.9	81.6	76.2	83.2	71.9	75.5	57.6	71.0	.....	2.9	5.0	2.08

The station is at 21° 18′ N., 157° 50′ W.; altitude 50 feet.

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, —0.06, is still to be applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10. Two directions of wind, or values of wind force, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

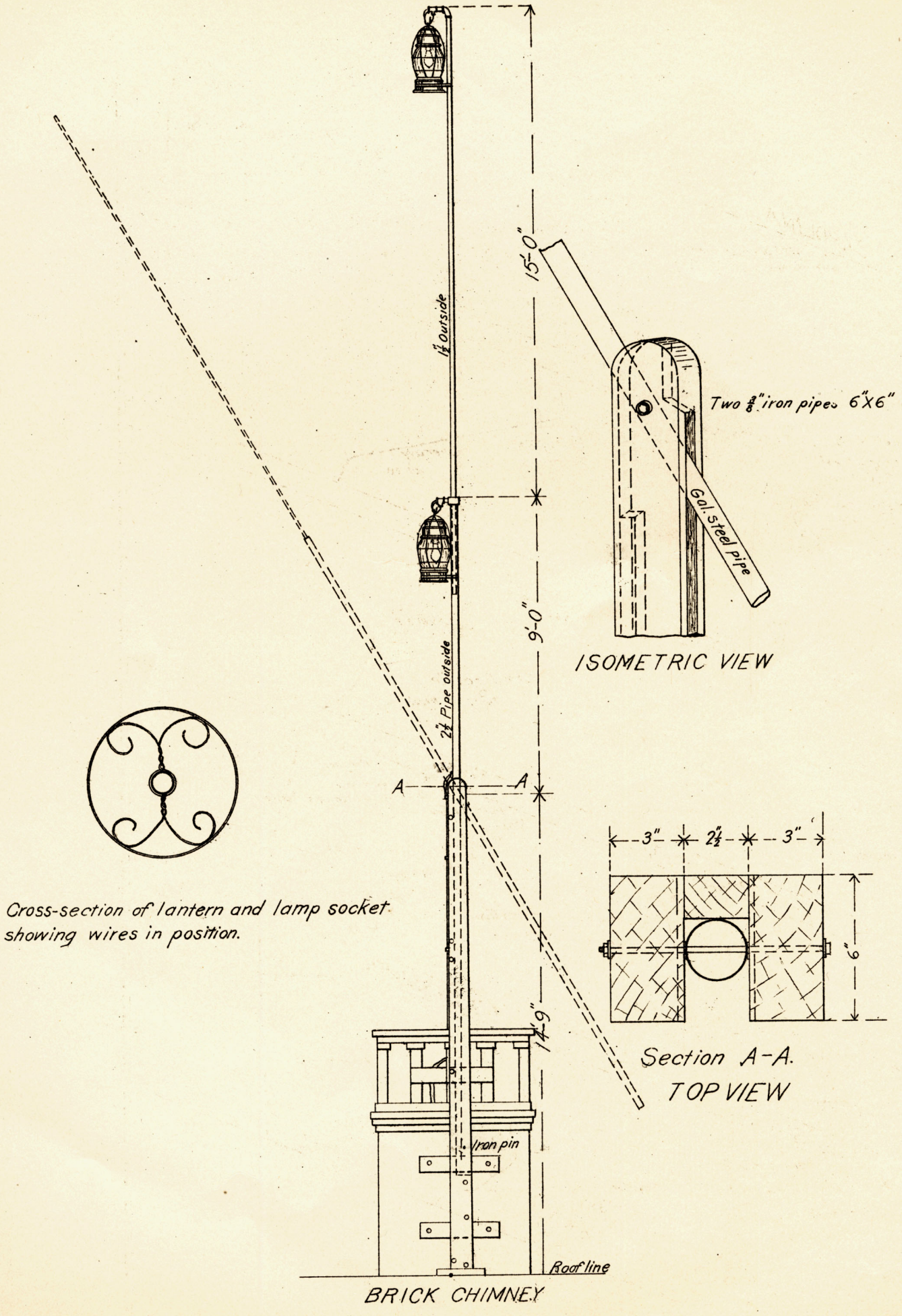
The rain gauge, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 50 feet above sea level.

Monthly mean temperature (6 + 2 + 9) ÷ 3 is 77.2, and the normal mean is ——. The normal rainfall for August is ——.

OBSERVATIONS AT PORT AU PRINCE, HAITI.

Through the kind cooperation of Prof. T. Scherer of Port au Prince, Haiti, the meteorological observations taken by him at $7^h\ 12^m$ a. m., local time, or noon, Greenwich time, are communicated in manuscript for early publication in the

Chart VIII. Signal Apparatus at Atlantic City, N. J.



Cross-section of lantern and lamp socket showing wires in position.